

WHAT IS CLAIMED IS:

1. A method for updating firmware associated with a memory storage device, the method comprising:

5 providing new firmware to a host;
sending the new firmware from the host to a reader, the host being in communication with the reader, the reader being arranged to interface with the memory storage device, wherein the memory storage device includes installed firmware;
sending the new firmware from the reader to the memory storage device; and
10 incorporating the new firmware into the memory storage device, wherein the new firmware at least partially replaces the installed firmware.

2. The method of claim 1 further including:

15 embedding the new firmware into a first command, wherein sending the new firmware from the host to the reader includes sending the first command from the host to the reader.

3. The method of claim 2 further including:

20 substantially extracting the embedded new firmware from the first command, wherein the reader substantially extracts the embedded new firmware.

4. The method of claim 1 wherein providing the new firmware to the host includes downloading the new firmware from a server.

25 5. The method of claim 1 wherein incorporating the new firmware into the memory storage device updates the installed firmware.

6. The method of claim 5 wherein incorporating the new firmware into the memory storage device further includes:

30 writing the new firmware into the memory storage device using the host.

7. The method of claim 6 further including:

enabling in-system-programming capabilities on the reader, wherein the in-system programming capabilities allow the new firmware to be incorporated into the memory storage device.

8. The method of claim 7 further including:

resetting the memory storage device after incorporating the new firmware into the memory storage device;

disabling the in-system-programming capabilities on the reader;

substantially communicably detaching the reader from the host;

reinitializing the memory storage device; and

substantially communicably reattaching the reader to the host.

9. The method of claim 8 wherein the memory storage device is a memory card that includes a non-volatile memory.

10. The method of claim 9 wherein the memory card is one selected from the group consisting of a secure digital card, a Compact Flash card, a multimedia card, a smart media card, and a Memory Stick card.

11. A system for updating firmware associated with a memory card, the system comprising:

the memory card, the memory card including installed card firmware;

means for providing new card firmware to the memory card; and

means for incorporating the new card firmware into the memory card such that the new card firmware at least partially replaces the installed card firmware.

12. The system according to claim 11 wherein the means for providing the new card firmware to the memory card includes:

a host; and

means for allowing the host to interface with the memory card, the host being arranged to provide the new card firmware to the means for allowing the host to interface with the memory card, wherein the means for allowing the host to interface with the
5 memory card includes means for sending the new card firmware to the memory card.

13. The system according to claim 12 wherein the host includes means for embedding the new card firmware into a first command, wherein the host provides the first command to the means for allowing the host to interface with the memory card.

10 14. The system according to claim 13 wherein the means for allowing the host to interface with the memory card includes means for substantially extracting the embedded new card firmware from the first command.

15 15. The system according to claim 12 wherein the host is arranged to write information onto the memory card.

16. The system according to claim 12 wherein the host is arranged to read information from the memory card.

20 17. The system according to claim 11 wherein the memory card includes a non-volatile memory.

25 18. The system according to claim 15 wherein the memory card is one selected from the group consisting of a secure digital card, a Compact Flash card, a multimedia card, and a Memory Stick card.

19. A memory storage device, the memory storage device being arranged to interface with a reader, the memory storage device comprising:

30 a storage element, the storage element being arranged to store data;

firmware, the firmware being arranged to cooperate with the storage element to store the data and to execute instructions, the firmware further being arranged to support in-system-programming capabilities, wherein the in-system-programming capabilities enable the firmware to be substantially updated while the memory storage device is
5 interfaced with the reader.

20. The memory storage device of claim 19 further including:
a receiving mechanism, the receiving mechanism being arranged to receive an update for the firmware through the reader.

21. The memory storage device of claim 20 wherein the firmware is arranged to incorporate the update to update the firmware.

22. The memory storage device of claim 21 wherein the updated firmware includes a capability to perform a power-on-reset to substantially reset the firmware associated with the memory storage device.

23. The memory storage device of claim 19 further including:
a controller, wherein the firmware is included in the controller.

24. The memory storage device of claim 19 wherein the storage element is a non-volatile memory storage element.

25. The memory storage device of claim 24 wherein the memory storage device is one selected from the group consisting of a secure digital card, a Compact Flash card, a multimedia card, and a Memory Stick card.

26. An adapter, the adapter being arranged to enable a memory device to communicate with a computing system, the adapter comprising:
30 a port, the port being arranged to accept the memory device;

a firmware, the firmware being arranged to support in-system-programming capabilities, the in-system-programming capabilities including enabling the computing system to provide the memory device with updated firmware code for the memory device through the adapter.

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27. The adapter of claim 25 wherein the adapter is one of a USB reader or a PC reader.

28. A command descriptor, the command descriptor being suitable for use in a computer system including a host, a reader, and a memory storage device, the reader and the memory storage device being arranged to support an in-system-programming update of firmware associated with the reader, the command descriptor comprising:

a first set of bits, the first set of bits being arranged to indicate an operation code, the operation code being associated with a first command supported by the command descriptor; and

at least a first bit, the at least first bit being arranged to indicate that in-system-programming is to be enabled in the memory storage device.

29. The command descriptor of claim 28 further including:

at least a second bit, the at least second bit being arranged to indicate that at least a second command is able to pass from the host to the memory storage device through the reader, wherein the second command is a pass through command.

30. The command descriptor of claim 28 wherein the at least first bit is arranged to substantially cause the firmware associated with the reader to set an internal flag to indicate that the in-system-programming update of the firmware is supported.